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MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WATER PROGRAMS • OFFICE OF MOBILE SOURCE AIR POLLUTION

A/C NO 4A-1

December 14, 1973

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SUBJECT: Unscheduled Maintenance

A. Purpose

The purpose of this Advisory Circular is to more fully describe unscheduled maintenance approval criteria and to list certain items for which no advance approval is required for unscheduled maintenance. This Advisory Circular amplifies and does not supersede A/C No. 4A.

B. Background

1. "Unscheduled maintenance" is defined in 40 CFR 85.002, 85.102, and 85.202 as "any adjustment, repair, removal, disassembly, cleaning, or replacement of vehicle components or systems which is performed to correct a part failure or vehicle malfunction." This maintenance differs from scheduled maintenance which is "performed on a periodic basis to prevent part failure or vehicle malfunction." In accordance with 40 CFR 85.075-6(a)(5)(i), 85.175-6(c), and 85.275-6(a)(5)(i), the need for unscheduled maintenance must be indicated by an overt indication of malfunction, such as persistent misfire, vehicle stall, overheating, fluid leakage, loss of oil pressure, or activation of a warning device.

2. Due to the publication of revisions to 40 CFR 85.075-6 on June 4, 1973 regarding maintenance, several questions of a general nature have arisen concerning the performance of unscheduled maintenance. Requests for advance approval of certain maintenance operations, many of which were approved for the 1974 model year program, have been received. These approvals are now subject to reevaluation for 1975, along with any additional maintenance requests.

C. Applicability

The provisions of this Advisory Circular are effective immediately, and are applicable to 1975 and later model year light duty certification test gasoline-fueled and diesel vehicles, including light duty trucks. Advisory Circular 4A remains applicable to 1974 model year light duty vehicles and to 1974 and later model year heavy duty engines.

**D. Criteria for Approval of Unscheduled Maintenance****1. Durability Vehicles: Engine or Fuel System Maintenance for Which Prior Approval is Given**

The Appendix lists those engine or fuel system components which, for the purposes of performing unscheduled maintenance during certification mileage accumulation, EPA judges are not likely to affect emissions. Therefore, under the authority of 40 CFR 85.075-6(a)(5), 85.175-6(c), and 85.275-6(a)(5), EPA hereby gives approval to perform corrective, but not preventive, maintenance on such components. Such maintenance does not require "before" and "after" maintenance emission tests but may, depending upon the notation in the Appendix, require the submission of an engineering report.

2. Durability Vehicles: Engine, Emission Control System, or Fuel System Maintenance for Which Prior Approval is not Given

a. In accordance with 40 CFR 85.075-6(a)(5), 85.175-6(c), and 85.275-6(a)(5), unscheduled maintenance on all engine, emission control system, and fuel system components other than those listed in the Appendix may not be performed on durability vehicles unless specific prior approval is given by EPA. Approval to perform diagnostic checks and/or tests or unscheduled maintenance will not be given unless there is an overt indication of component or system malfunction and EPA has been given the opportunity to verify the existence of the overt indication. If EPA concurs that an overt indication is present, the manufacturer will not be allowed to perform maintenance until a written diagnostic procedure which is to be used to determine the cause of the failure and to specify the corrective action required is submitted to and approved by EPA. That written diagnostic procedure to be supplied to in-use service personnel in accordance with 40 CFR 85.075-2(b)(5), 85.175-2(b)(5), and 85.275-2(b)(5), should be submitted as soon as possible, preferably at the time the Part I Application is submitted.

b. Once EPA reviews and approves the written diagnostic procedure and is given the opportunity to verify the overt indication of malfunction, the manufacturer may then be given approval to perform the work outlined in the diagnostic procedure. Once EPA is apprised of the information obtained from the diagnostic procedure, EPA will determine whether both "before" and "after" maintenance emission tests, just the "after" test, or no emission testing, are required. In accordance with 40 CFR 85.075-6(c), 85.175-6(d), and 85.275-6(d), an engineering report will be required of all unscheduled maintenance.

3. Durability Vehicles: Maintenance of Components other than Engine, Emission Control System, or Fuel System Components.

a. In accordance with 40 CFR 85.075-6(c), 85.175-6(c), and 85.275-6(c), repairs to vehicle components of the durability data vehicle, other than the engine, emission control system, or fuel system, shall be performed only as a result of part failure, vehicle system malfunction, or with advance EPA approval. The Appendix also lists those non-engine, emission control system, or fuel system components for which maintenance may be performed without prior EPA approval and whether the performance of maintenance on those components requires the submission of an engineering report. Except for those items listed in the Appendix, EPA shall

be given the opportunity to verify such part failure or vehicle system malfunction and approve the written diagnostic procedure used to identify the malfunction before the maintenance may be performed. At such time as EPA is given opportunity to verify such part failure or vehicle system malfunction, EPA will determine whether the performance of maintenance may reasonably be expected to affect emissions.

1) If EPA determines the performance of such maintenance may reasonably be expected to affect emissions, such maintenance requires, in accordance with 40 CFR 85.075-6(d), 85.175-6(d), and 85.275-6(d), "before" and "after" maintenance emission tests and prompt reporting of test results, as well as a complete record of all pertinent maintenance performed, including an engineering report of any malfunction diagnosis and the corrective action taken. Preliminary engineering reports shall be air posted within 24 hours or delivered within three working days.

2) If EPA determines that the performance of such maintenance may not reasonably be expected to affect emissions, such maintenance does not require "before" and "after" maintenance tests. However, an engineering report of any malfunction diagnosis and the corrective action taken may still be required to be submitted.

b. Manufacturers may submit lists of items in addition to those in the Appendix which they feel could be maintained without effect on emissions and EPA may grant prior approval to perform such maintenance.

4. Emission Data Vehicles: Maintenance on all Components

In accordance with 40 CFR 85.075-6(b), 85.175-6(b), and 85.275-6(b), engine idle speed may be adjusted once by the manufacturer before the 4,000-mile test point without prior EPA approval. Such maintenance may reasonably be expected to affect emissions and therefore requires tests under 40 CFR 85.075-6(d), 85.175-6(d), and 85.275-6(d). The performance of other maintenance on emission data vehicles requires prior EPA approval.

5. Durability and Emission Data Vehicles and Engines: General Applicability

Although Sections D. 1-4 above do not require that manufacturers request prior approval for all maintenance concerning test vehicles and engines, (i.e., maintenance which is not "pertinent" need not be reported), manufacturers are encouraged to consult with EPA prior to the performance of any maintenance which does not clearly fit into one of the above categories, e.g., part of the fuel system. Observance of such a procedure will greatly reduce the possibility of a test vehicle being subsequently disallowed for the incorrect performance of maintenance. All pertinent maintenance performed on test vehicles must be reported in accordance with 85.075-4(a), 85.175-4(a), and 85.275-4(a), preferably on the Maintenance Log recommended in the Application Format for Certification of Light Duty Motor Vehicles. Because of the difficulty in establishing what maintenance

may or may not be "pertinent", manufacturers are urged to report all maintenance and thereby avoid the possibility of failure to report the performance of "pertinent maintenance."

Mobile Source Air Pollution Control

Attachment

APPENDIX

Allowable Unscheduled Maintenance for Light Duty Durability Test Vehicles

Maintenance on the following items may be conducted without prior approval.

Emission tests "before" and "after" the maintenance are not required. Performance of all maintenance should be reported.

1. Front end drive belts (other than air pump or camshaft drive)
2. Front end pulleys (other than air pump)
3. Fan and spacer
4. Crankshaft damper
5. Alternator, brackets
6. Engine mounts and attaching bolts
7. Power steering pumps, brackets, clamps and hoses
8. Rocker arm covers, oil fill cap and gaskets
- *9. Exhaust manifolds and gaskets (providing exhaust manifold is not part of a thermal reactor or air injection system)
10. Heater, hoses, clamps and brackets
- *11. Radiator, radiator hoses, and attaching parts
- *12. Thermostat and housing
13. Air conditioning compressor assembly, evaporator lines and brackets
- *14. Fuel lines and filter
- *15. Dipstick and tubes for the transmission and engine
16. Oil pan and gaskets
17. Front cover and gaskets
- *18. Crankshaft front and rear oil seals
19. Side cover and gaskets
- *20. Oil pump, drive and pick-up screen
- *21. Water pump and gaskets
- *22. Oil pressure and temperature sensing units
23. Fluid replacement and zerk fittings
24. Transmission cooler lines, hoses and clamps
- *25. Flywheel, clutch housing and clutch assembly
26. Drive shaft, universal joints, shift linkage and clutch linkage
- *27. Rear axle (same ratio only)
28. Shock absorbers and springs
29. Suspension components
30. Alignment and balancing of wheels
31. Tires (same size and type only) and wheels
32. Brakes
33. Starter motor and solenoid
34. Battery, cables and attaching parts
35. Vehicle wiring (excluding ignition wires)
36. Lights (except emission system maintenance warning lights)
37. Windows, wipers, washers and mechanisms
38. Seats and interior trim

*Engineering report required